



---

## **CITY OF ANDERSON LAND DEVELOPMENT REGULATIONS**

City of Anderson, South Carolina

February 20, 2008

---

# CITY OF ANDERSON LAND DEVELOPMENT REGULATIONS

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1.0 PURPOSE OF LAND DEVELOPMENT REGULATIONS .....	2
2.0 SITE DEVELOPMENT PLAN CHECKLIST .....	2
3.0 STORMWATER MANAGEMENT PLAN AND CALCULATION PACKAGE .....	2
4.0 PERMITTING PROCESS .....	3
5.0 REQUIREMENTS TO ADDRESS TOTAL MAXIMUM DAILY LOADS (TMDL'S) .....	4
6.0 INSPECTION AND MAINTENANCE SCHEDULES.....	4
APPENDIX A: DETAILED SITE DEVELOPMENT PLAN CHECKLIST .....	5
APPENDIX B: STORMWATER MANAGEMENT CALCULATIONS PACKAGE CHECKLIST .....	13
APPENDIX C: STORMWATER MANAGEMENT DESIGN STANDARDS CHECKLIST .....	15
APPENDIX D: DETAILED PERMITTING AND NOTICE OF TERMINATION (NOT) PROCESSES .....	17
APPENDIX E: PERMITTING STEPS SUMMARY TABLE.....	19

---

## 1.0 PURPOSE OF LAND DEVELOPMENT REGULATIONS

These regulations present a set of minimum requirements and standards for storm water management for development within Anderson, South Carolina. The purpose of the minimum requirements and standards is to reduce the impact of storm water runoff on receiving waterbodies downstream from land development. The goal of this document is to address both water quantity and water quality requirements and standards associated with storm water runoff from land development and to document the process for receiving Land Disturbance Approval from the City of Anderson.

## 2.0 SITE DEVELOPMENT PLAN CHECKLIST

For land development/building activities within the City of Anderson, SC, please follow the guidelines contained herein for submitting plans and obtaining permits and approvals.

A **full set of plans** shall include, at a minimum, the following:

- Existing Conditions and Demolition Plan
- Site Layout Plan
- Erosion Control and Grading Plan
- Utility Plan\*
- Stormwater Management Plan
- Landscaping Plan
- Any necessary details

The Detailed Site Development Plan Checklist can be found in **APPENDIX A** of this document.

\*Subdivision plan package shall include construction plans for sanitary sewer and potable water systems.

Each plan shall be drawn on its own sheet and each sheet shall be signed and sealed by an architect, professional engineer, professional land surveyor, or other licensed professional as appropriate.

## 3.0 STORMWATER MANAGEMENT PLAN AND CALCULATION PACKAGE

In addition, a Stormwater Management Calculation Package shall be submitted with appropriate sketches and drawings and shall include at least the following items:

- Specific location, including north arrow
- Project narrative
- Parking plan; for parking areas with ten (10) or more spaces, plan shall be prepared by a licensed engineer
- Existing and proposed topographic and spot elevations
- Dumpster location(s) and screening
- Development site shall comply with DHEC's stormwater management requirements and Article V of the Code of the City of Anderson, SC.
- Existing and proposed utility locations

Provide the items listed in the detailed Stormwater Management Calculation Package Checklist as found in **APPENDIX B** of this document. In addition, the items listed in the Stormwater Management Design Standards Checklist as found in **APPENDIX C** are also required.

---

## 4.0 PERMITTING PROCESS

In order to provide for adequate plan review and to receive Land Disturbance Approval from the City of Anderson, please submit a Land Disturbance Submittal Package, to the City of Anderson Building Department at 600 South Main Street, Anderson, SC 29624.

### Land Disturbance Submittal Package:

- Six (6) complete sets of plans, one (1) digital set of plans,
- South Carolina Department of Health and Environmental Control (SCDHEC) Approval Letter<sup>1</sup> (if necessary),
- A copy of the Notice of Intent (NOI) for Stormwater Discharges from Large and Small Construction Activities (NPDES General Permit SCR 100000) (if necessary), and
- One (1) Stormwater Management Calculation Package.

Partial plans cannot be accepted.

A detailed flowchart outlining the permitting process including the Detailed Permitting and Notice of Termination (NOT) Processes can be found in **APPENDIX D**. The Permitting Steps Summary Table also describes the permitting process and can be found in **APPENDIX E**.

The City's review process will be performed concurrently with the review administered by SCDHEC. For development of a site disturbing one (1) acre or more, an approved SCDHEC Approval Letter accepting the application shall be submitted to the City prior to obtaining Land Disturbance Approval in the City of Anderson. For development of a site disturbing less than one (1) acre the City may conduct a simplified review and issue Land Disturbance Approval.

For a property located on a street within the State Highway System or County, all activities within the Right-of-Way must be approved by applying to the SC Department of Transportation (SCDOT) or County for an encroachment permit. Such application also shall be routed to the City for review and approval.

The anticipated review time is **ten (10) business days**. A revision list will be returned to the developer/engineer with notes and/or comments. If revisions/corrections are necessary, a revised set of plans and/or Stormwater Management Calculations Package and a cover letter addressing the revisions/corrections made shall be submitted to the appropriate department.

### **Sanitary Sewer Construction Requirements**

If, on your site, sanitary sewer line construction involves the installation of new manholes and/or lines 8 inches in size or larger, a pre-design conference and pre-construction conference with the City of Anderson Wastewater Treatment Division is required. The Wastewater Treatment Division is located at 309 Kirkwood Drive, and the telephone number is (864)231-2250. The City of Anderson is approved to administer the Delegated Review Program for SCDHEC. Please submit the initial design and specifications to the Wastewater Treatment Division Director. After obtaining an acceptance letter from the Wastewater Treatment Division Director, the signed acceptance letter, plans, and other appropriate information shall be submitted to the Engineering Department for SCDHEC Delegated Review. A detailed checklist for delegated review approval may be obtained from the Engineering Department by calling (864)231-2246.

For any additional information, please contact the Building Department at (864)231-2217.

---

<sup>1</sup> Where "SCDHEC Approval Letter" is used in this document it refers to the approval letter that is received from SCDHEC as a result of following the submittal requirements contained within the "Notice of Intent (NOI) for Stormwater Discharges from Large and Small Construction Activities, NPDES General Permit SCR 100000". This form can be found on the SCDHEC website at <http://www.scdhec.gov/environment/water/swerfmain.htm>. The SCDHEC Approval Letter shall be submitted to the City of Anderson upon its receipt by the owner or entity responsible for the Land Disturbance Submittal Package. See Appendix D: Detailed Permitting and Notice of Termination (NOT) Processes for more information.

---

## 5.0 REQUIREMENTS TO ADDRESS TOTAL MAXIMUM DAILY LOADS (TMDL'S)

A Total Maximum Daily Load (TMDL) is the amount of a pollutant that a water body can incorporate while meeting water quality standards. TMDL is further defined as the pollutant load developed by the Environmental Protection Agency (EPA) and SCDHEC that designates the permitted amount of discharge allowed to flow into a water body of the State or United States.

If a TMDL has been established for any watershed into which you discharge, you must incorporate any limitations, conditions and requirements contained in the TMDL applicable to your discharges, if any, including monitoring frequency and reporting required in order to become eligible for permit coverage. Applicable limitations, conditions and requirements contained in the TMDL are those limitations, conditions and requirements set forth in the TMDL implementation plan and attributed specifically to the City of Anderson.

A list of impaired waterbodies, known as the 303(d) list, can be found on SCDHEC's website at (<http://www.scdhec.gov/environment/water/regs/r61-110.doc>). Further information on TMDL's can also be found on that site.

## 6.0 INSPECTION AND MAINTENANCE SCHEDULES

Maintenance of the stormwater management system is critical for the achievement of its purpose of controlling stormwater runoff quantity and quality and the short-term and long-term public health, safety, and general welfare of the citizens of the City of Anderson.

- (a) A permanent maintenance plan for the stormwater management system shall be included in the Land Disturbance Submittal Package. As part of the maintenance plan, the property owner or lessee of such facility shall specifically agree to be responsible for permanent maintenance. In order to transfer maintenance responsibility, a letter of acceptance by the new owner(s) accepting permanent maintenance responsibility shall be filed with the City of Anderson Building Department. It may be required to file the permanent maintenance plan with the Anderson County Register or Deeds. Contact Anderson County Register of Deeds for more information.
- (b) As part of the Land Disturbance Submittal Package the applicant shall submit construction and BMP maintenance and inspection schedules. Required and recommended schedules for BMP maintenance and inspection can be found in the most recent version of the South Carolina DHEC Storm Water Management BMP Handbook. The handbook can be found on the SCDHEC website at [http://www.scdhec.gov/environment/ocrm/pubs/tech\\_docs\\_water.htm#bmp](http://www.scdhec.gov/environment/ocrm/pubs/tech_docs_water.htm#bmp)
- (c) If the construction is to be phased, no stage work, related to the construction of stormwater management facilities shall commence until the preceding stage of work is completed in accordance with the approved Land Disturbance Submittal Package. The procedure for construction phases beginning and ending and what constitutes such conditions can be found in the most recent version of the South Carolina DHEC Storm Water Management BMP Handbook.
- (d) The permittee shall notify the City of Anderson through the City Manager or his duly appointed designee before commencing any work to implement the approved Land Disturbance Submittal Package and upon completion of any phase or designated component of the site. Notification schedules can be found in the most recent version of the South Carolina DHEC Storm Water Management BMP Handbook. All self-inspections, maintenance actions, BMP replacements, and changes to the approved Land Disturbance Submittal Package shall be documented and presented upon request to the City of Anderson through the City Manager or his duly appointed designee.

## APPENDIX A: DETAILED SITE DEVELOPMENT PLAN CHECKLIST

The following checklists can be used to identify development plan minimum requirements. The “Reference Documentation” column in the checklists below can be populated by permittees to help make the City’s review process more efficient. Submitters simply add a reference to the location in the submittal (i.e. plan sheet number and name, calculations package page number and paragraph, etc.), that contains the plan requirement item from the checklist. More detailed information, in some cases, may expedite the City’s review process.

### **SINGLE PARCEL DEVELOPMENT PLAN CHECKLIST (Revised January 2008):**

#### **EXISTING SITE INFORMATION**

<b>EXISTING SITE INFORMATION</b>	<b>Check</b>	<b>Reference Documentation</b>	<b>Plan Requirements</b>
<b>(Minimum Requirements - When Applicable)</b>	Complete <input type="checkbox"/>		1. Boundary Survey showing all boundary/property lines, easements, rights-of-way, acreage, adjoining property owners with TMS, deed, and plat reference.
	Complete <input type="checkbox"/>		2. Each sheet shall contain a title block, containing the owners name, project name, date, and scale; north arrow; vicinity map; and name of PE, PLS, Landscape Architect, or Architect preparing the plan, affixed with seals and signatures.
	Complete <input type="checkbox"/>		3. Identify current zoning, existing land use, and existing adjacent land uses.
	Complete <input type="checkbox"/>		4. Location of all existing buildings, access drives, easements, water and sewer lines, storm drainage, and all other existing improvements and utilities.
	Complete <input type="checkbox"/>		5. Topographic information 1, 2, or 5 feet contour interval dependent upon land slope and proposed grading Provide a minimum of two (2) project bench marks. Note Datum (i.e., assumed, NGVD, NAVD 88, etc.).
	Complete <input type="checkbox"/>		6. Tree lines of existing wooded areas. Location of individual trees (NOT located in existing wooded areas) larger than 18" in diameter, identified by common name.
	Complete <input type="checkbox"/>		7. Identify and provide copy of certification by US Army Corp of Engineers, Wetlands permits. Locate streams, ponds, drainage ditches, boundaries of floodway, and 100-year floodplain and other wetlands.
	Complete <input type="checkbox"/>		8. Provide copies of Restrictive Covenants, Deed Restrictions, or “Mutual Use Agreements.”

**PROPOSED SITE INFORMATION**

<b>PROPOSED SITE INFORMATION</b>	<b>Check</b>	<b>Reference Documentation</b>	<b>Plan Requirements</b>
<b>(Minimum Requirements - When Applicable)</b>	Complete <input type="checkbox"/>		1. Location and layout of all proposed principal and accessory buildings, dimensions of proposed buildings, and setbacks of buildings from property lines, and distance separating structures.
	Complete <input type="checkbox"/>		2. Where proposed, show the number, size and type of residential dwelling units.
	Complete <input type="checkbox"/>		3. The number of required off-street parking spaces, and number and location of parking spaces proposed. Include details of typical striping, handicap striping, handicap ramps, and directional painting/striping.
	Complete <input type="checkbox"/>		4. Location and type of all required landscaping, buffer yards, and screening identified by common plant names. Include details and planting schedule.
	Complete <input type="checkbox"/>		5. Location, type, size, and height of all exterior lighting and signs. Include details.
	Complete <input type="checkbox"/>		6. Location of areas intended to satisfy the open space requirement and the percent of such areas with regard to the overall site.
	Complete <input type="checkbox"/>		7. Impervious surface area, total surface area, and impervious area ratio. Include sidewalks, drives, and walkways as a part of the impervious area.
	Complete <input type="checkbox"/>		8. Location of proposed street or drives showing curb and gutter arrangements, shoulders and swales, and street or drive width. Include details of road section typical, curb and gutter, islands, cul-de-sacs, and turnabouts.
	Complete <input type="checkbox"/>		9. Provide a traffic, parking, and circulation plan showing arrangements and drives, ingress and egress to and from existing streets, direction of travel lanes, dimensions and angle of typical parking spaces and width of all proposed drives and isles, and documentation of cross easements for parking/drives. Include details as needed.
	Complete <input type="checkbox"/>		10. Location and dimensions of sidewalks and walkways. Include details as needed.
	Complete <input type="checkbox"/>		11. Dumpster location and screening. Include detail of dumpster pad, dumpster, and screening.
	Complete <input type="checkbox"/>		12. Proposed finished grade by contour, use spot elevations to prevent ponding water.

PROPOSED SITE INFORMATION (CONTINUED)	Check	Reference Documentation	Plan Requirements
	(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>	
Complete <input type="checkbox"/>			14. Existing and proposed easements.
Complete <input type="checkbox"/>			15. Provide stormwater management and erosion control calculations using the 2- and 10-year design storm to compare pre and post-developed storm runoff. Post-developed runoff can be no greater than the pre-developed. Sediment control calculations are required when the disturbed area is greater than 5.0 acres. (See also <b><u>Stormwater Management Calculation Package Checklist</u></b> )
Complete <input type="checkbox"/>			16. Provide approved SCDOT or Anderson County encroachment permits.
Complete <input type="checkbox"/>			17. Provide approved SCDHEC permits (i.e. water, sewer, and stormwater).

**SUBDIVISION PLAN CHECKLIST (Revised January 2008):**

**EXISTING SITE INFORMATION**

EXISTING SITE INFORMATION	<u>Check</u>	Reference Documentation	Plan Requirements
(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>		1. Boundary Survey showing all boundary/property lines, easements, rights-of-way, acreage, adjoining property owners with TMS, deed, and plat reference.
	Complete <input type="checkbox"/>		2. Each sheet shall contain a title block, containing the owners name, project name, date, and scale; north arrow; vicinity map; and name of PE, PLS, or Landscape Architect preparing the plan, affixed with seals and signatures.
	Complete <input type="checkbox"/>		3. Identify current zoning, existing land use, and existing adjacent land uses.
	Complete <input type="checkbox"/>		4. Location of all existing buildings, access drives, easements, water and sewer lines, storm drainage, and all other existing improvements and utilities.
	Complete <input type="checkbox"/>		5. Topographic information 1, 2, or 5 feet contour interval dependent upon land slope and proposed grading. Provide a minimum of two (2) project bench marks. Note Datum (i.e., assumed, NGVD, NAVD 88, etc.).
	Complete <input type="checkbox"/>		6. Tree lines of existing wooded areas. Location of individual trees (NOT located in existing wooded areas) larger than 18" in diameter, identified by common name.
	Complete <input type="checkbox"/>		7. Identify and provide copy of certification by US Army Corp of Engineers, Wetlands permits. Locate streams, ponds, drainage ditches, boundaries of floodway, and 100-year floodplain and other wetlands.
	Complete <input type="checkbox"/>		8. Provide copies of Restrictive Covenants, Deed Restrictions, or "Mutual Use Agreements."

**PROPOSED SUBDIVISION PLAN INFORMATION**

<b>PROPOSED SUBDIVISION PLAN INFORMATION</b>	<b>Check</b>	<b>Reference Documentation</b>	<b>Plan Requirements</b>
<b>(Minimum Requirements - When Applicable)</b>	Complete <input type="checkbox"/>		1. Sewer Plan to include top elevation, invert elevation, type of manhole, station or identification number or designation, collector line identification, location of physical interferences and elevation, i.e., overhead power, underground power, gas, water, or storm drainage. The minimum acceptable right-of-way is 25'. The sewer must be located by bearing and distance from a known point and then subsequent manholes are to be located by bearing (angle) and distance.
	Complete <input type="checkbox"/>		2. Sewer Profile to include existing and proposed grades, pipe slope, pipe material, pipe size, and distance between manholes. Horizontal scale should be a factor of 10 greater than the vertical scale.
	Complete <input type="checkbox"/>		3. As-built plans must be submitted with all service taps located before final plat approval.
	Complete <input type="checkbox"/>		4. Water Distribution Plan to include fire hydrants, meter locations, line sizes, valves, blowoffs, and other appurtenances. As-built plans must be submitted prior to final plat approval.
	Complete <input type="checkbox"/>		5. Road Plan to include 18" curb and gutter, only 2 streets can enter at one point, and must be located by bearing and distance from a known point. The road alignment must be shown using bearings (angles) and stationing every 100' and at each horizontal curve the PC and PT station must be shown. Each horizontal curve information shall include the radius and delta angle. The centerline radius shall be no less than 150'. The right-of- way at street intersections shall have a 25' radius. The roadway at the street intersections shall have a 25' radius. Streets shall intersect as nearly as possible to right angles - angle less than 60o will not be accepted. Street intersections must be spaced a minimum of 150' right-of-way to right-of-way. Street right-of-way can be no closer than 150' from the Railroad right-of-way. The center of a cul-de-sac can be no greater than 750' from the intersecting street.
	Complete <input type="checkbox"/>		6. Vertical curves must be a minimum of 100' or 15 times the algebraic difference of the slopes. Grades at intersections shall be no greater than 5% within 50' of the right-of-way of said intersection. Maximum grade is 10% and minimum grade is 0.5%. Minor Street 50' R/W 24' FOC to FOC Minor Collector Street 60' R/W 40' FOC to FOC Cul-de-Sac 50' Radius 40' Radius FOC.

PROPOSED SUBDIVISION PLAN INFORMATION (CONTINUED)	Check	Reference Documentation	Plan Requirements
(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>		7. Grading and Drainage Plan to include pipe and swale location, slope, size, material, and document the stormwater discharges and capacity of pipe and swale. Swale should have a minimum freeboard of 0.5' or 33% of the flow depth, whichever is greater. See also <u>Stormwater Management and Erosion Control Plan Checklist</u> .
	Complete <input type="checkbox"/>		8. Storm drains and swales should have a minimum of 20' drainage easement. All side and rear lot lines shall have a minimum of 7.5' reserved for drainage and utility easements.
	Complete <input type="checkbox"/>		9. Lot depth must be greater than 100'.
	Complete <input type="checkbox"/>		10. Provide copies of SCDOT and Anderson County encroachment permits for entrances, stormwater conveyance, grading, or utility construction. Provide copies of SCDHEC Stormwater Permit, Permit to Construct Sanitary Sewer System, and Permit to Construct Drinking Water System.

## STORMWATER MANAGEMENT PLAN CHECKLIST

STORMWATER MANAGEMENT PLAN CHECKLIST	Check	Reference Documentation	Plan Requirements
(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>		1. North Arrow, Scale, and Graphic Scale Bar
	Complete <input type="checkbox"/>		2. Property Boundary
	Complete <input type="checkbox"/>		3. Legend
	Complete <input type="checkbox"/>		4. Registered Engineer Stamp and Signature. Engineering Firm or Engineer Title Block.
	Complete <input type="checkbox"/>		5. Certificate of Authorization Stamp
	Complete <input type="checkbox"/>		6. Existing and Proposed Contours.
	Complete <input type="checkbox"/>		7. Limits of Disturbed Area and Areas to Stockpile Soil or Debris
	Complete <input type="checkbox"/>		8. Construction Sequence. Include installation of critical measures prior to initiation of the land disturbing activity and removal of measures after the areas have been permanently stabilized.
	Complete <input type="checkbox"/>		9. Waters of the state and wetlands must be delineated on the plans. If waters are impacted, provide copies of correspondence from US Army Corp of Engineers.
	Complete <input type="checkbox"/>		10. Maintenance Requirement. Each erosion control measure shall have maintenance requirements stated on each detail for that control practice.
	Complete <input type="checkbox"/>		11. Location and details of all temporary and permanent control measures.
	Complete <input type="checkbox"/>		12. Grassing and stabilization specifications
	Complete <input type="checkbox"/>		13. Construction Entrance/Exit. Provide location and detail.

STORMWATER MANAGEMENT PLAN CHECKLIST (CONTINUED)	Check	Reference Documentation	Check	Plan Requirements
(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>	14. Required notes to be included on the STORMWATER MANAGEMENT PLAN:		
			Complete <input type="checkbox"/>	1. Slopes which exceed (8) vertical feet should be stabilized with synthetic or vegetative mats, in addition to hydroseeding. It may be necessary to install temporary slope drains during construction.
			Complete <input type="checkbox"/>	2. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after work has ceased, unless activity in that portion of the site will resume within 21 days.
			Complete <input type="checkbox"/>	3. All sediment and erosion control devices shall be inspected every seven days or after each rainfall occurrence that exceeds ½ inch. Damaged or ineffective devices shall be repaired or replaced, as necessary
			Complete <input type="checkbox"/>	4. Provide silt fence and/or other control devices, as may be required, to control soil erosion during utility construction. All disturbed areas shall be cleaned, graded, and stabilized with grassing immediately after the utility installation.
			Complete <input type="checkbox"/>	5. All erosion control devices shall be properly maintained during all phases of construction until the completion of all construction activities and all disturbed areas have been stabilized. Additional control devices may be required during construction, in order to control erosion and/or offsite sedimentation. All temporary control devices shall be removed once construction is complete and the site is stabilized.
			Complete <input type="checkbox"/>	6. The contractor must take necessary action to minimize tracking of mud onto paved roadway from construction areas. The contractor shall daily remove mud/soil from pavement as may be required.
			Complete <input type="checkbox"/>	7. Residential subdivisions require erosion control features for infrastructure as well as for individual lot construction. Individual property owners shall follow these plans during lot construction or provide an individual plan meeting Section R.72.307 of the Stormwater Management and Sediment Reduction Act Requirements.

## APPENDIX B: STORMWATER MANAGEMENT CALCULATIONS PACKAGE CHECKLIST

The following checklist can be used to identify the Stormwater Management Calculations Package minimum requirements. The "Reference Documentation" column in the checklists below can be populated by permittees to help make the City's review process more efficient. Submitters simply add a reference to the location in the submittal (i.e. plan sheet number and name, calculations package page number and paragraph, etc.), that contains the plan requirement item from the checklist. More detailed information, in some cases, may expedite the City's review process.

STORMWATER MANAGEMENT SUBMITTAL PACKAGE CHECKLIST	Check	Reference Documentation	Plan Requirements
(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>		1. Copy of approved <u>SCDHEC Approval Letter</u> .
	Complete <input type="checkbox"/>		2. Location map with north arrow and scale.
	Complete <input type="checkbox"/>		3. Project Narrative to include a brief overall description of the pre and post-developed conditions and state if the project is part of a larger common development.
	Complete <input type="checkbox"/>		4. USGS Topographic Map showing the site location, the route of runoff from the site to the nearest offsite receiving waterbody, and identify any critical areas downstream of the proposed site (i.e., road crossings, ponds, wetlands, etc.).
	Complete <input type="checkbox"/>		5. Drainage Areas Map showing existing drainage areas and discharge points, proposed drainage areas and discharge points, and offsite drainage areas that drain through the site.
	Complete <input type="checkbox"/>		6. Floodway maps/FEMA Flood Insurance Rate Maps.
	Complete <input type="checkbox"/>		7. Anderson County Soils Map showing the site and specify each soil type and NRCS Hydrologic Soil Group.
	Complete <input type="checkbox"/>		8. Include summary sheet of calculations to include the 2- and 10-year pre and post-developed discharges (cfs) at each outfall, the 2- and 10-year pre and post-developed velocities (fps) at each outfall. For each detention structure include peak inflow, peak outflow, and maximum water surface elevation. Sediment structures must have greater than 80% trapping efficiency. Detention waivers will not be granted by the City of Anderson.

STORMWATER MANAGEMENT SUBMITTAL PACKAGE CHECKLIST (CONTINUED)	Check	Plan Requirements	
	(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>	
Complete <input type="checkbox"/>			11. Proposed drainage must flow to an existing outfall. Storm drainage or pond outfalls must be carried to an existing drainage outfall such as a ditch, swale, pipe, etc. A point discharge onto adjacent property, where there was not a point discharge previously, cannot be allowed unless written permission from the adjacent property owner is granted or calculations show that no adverse impacts will result from the point discharge. In some cases a level spreader can be used to dissipate the flows before they are released to the adjacent property.
Complete <input type="checkbox"/>			12. Proposed fill slopes or embankments shall remain far enough away from adjacent property to “work” without going on the adjacent property (a 20' to 30' buffer is recommended). Slopes must be stabilized and “extra measures” may be required to stabilize slopes greater than 4:1. Extra measures may include retaining walls, the use of synthetic or vegetative matting, diversion berms, temporary slope drains, in addition to hydroseeding.
Complete <input type="checkbox"/>			13. Full set of properly signed and sealed site plans (see also Site Development Checklist and Subdivision Checklist) and copy of appropriate calculations (see also <u>Stormwater Management Calculations Checklist</u> ).

## APPENDIX C: STORMWATER MANAGEMENT DESIGN STANDARDS CHECKLIST

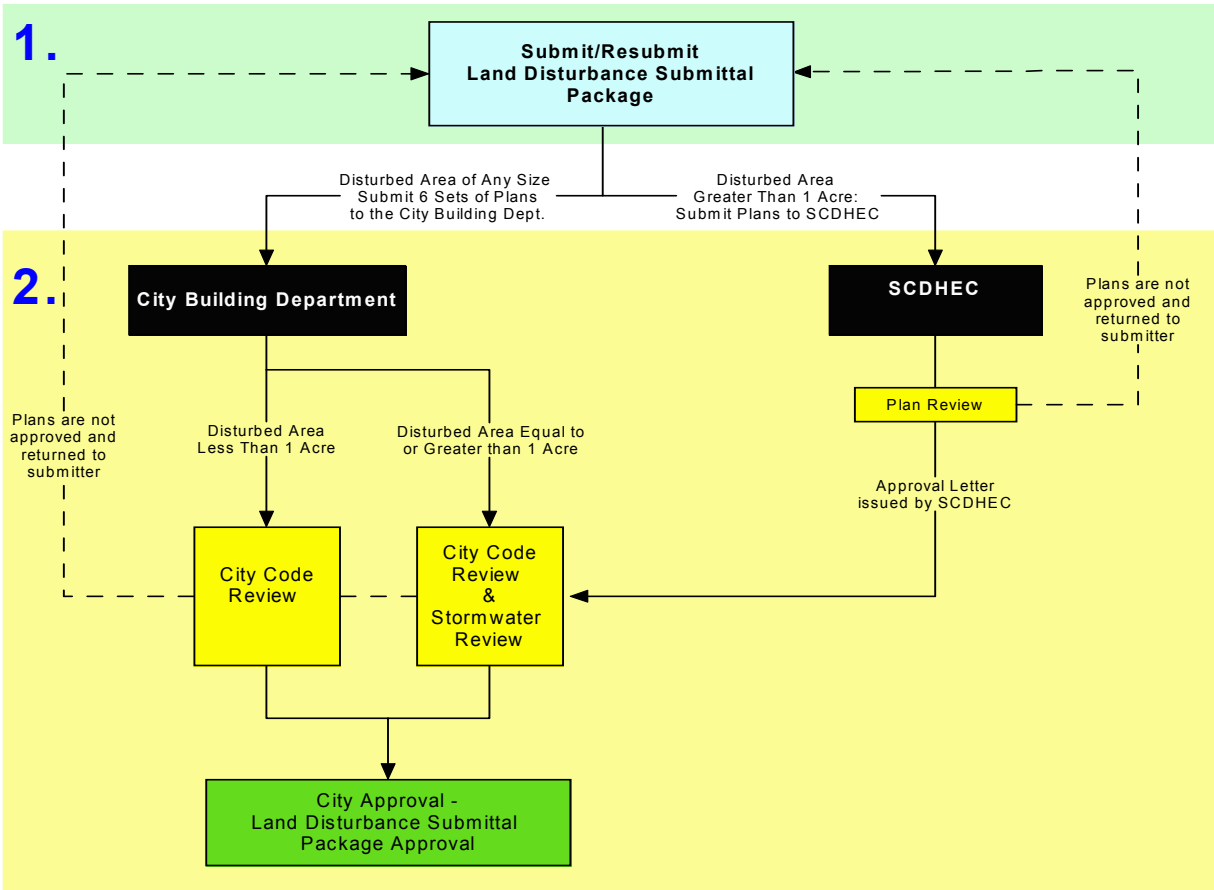
The following checklist can be used to identify the minimum requirements for stormwater management designs. The "Reference Documentation" column in the checklists below can be populated by permittees to help make the City's review process more efficient. Submitters simply add a reference to the location in the submittal (i.e. plan sheet number and name, calculations package page number and paragraph, etc.), that contains the plan requirement item from the checklist. More detailed information, in some cases, may expedite the City's review process.

DESIGN STANDARDS	Check	Reference	Plan Requirements
(Minimum Requirements - When Applicable)	Complete <input type="checkbox"/>		1. Pre and Post-developed calculation must include the 2- and 10-year peak flow rate at each outfall and the 2- and 10-year peak velocities at each outfall. Stormwater conveyance structures must be designed to pass the 10-year design storm.
All design standards must, at a minimum, meet the requirements stated in State Regulation R.61-9.	Complete <input type="checkbox"/>		2. The Rational Method/Equation cannot be used to size detention ponds. A volume-based hydrograph routing is required for full pond routing. The TR55 program does not perform a full pond routing so that hand calculations, spreadsheets, or other computer programs (i.e., SEDCAD, PONDPACK, etc.) must be used to perform the pond routing. A 24-hour rainfall event using the 241 point NRCS rainfall distribution must be used. Run the 2, 10, 25, and 100-year storm events. For the City of Anderson use the following information $R_1 = 3.3"$ , $R_2 = 4.0"$ , $R_5 = 5.2"$ , $R_{10} = 5.9"$ , $R_{25} = 6.7"$ , $R_{50} = 7.5"$ , $R_{100} = 8.0"$ , Rainfall Factor = 275, and NRCS Type II storm. Note that detention is required for the 2- and 10-year design storm; however, it is recommended that the principal spillway pass the 25-year design storm (before reaching the emergency spillway) and that the emergency spillway be sized to pass all of the 100-year design storm with 6" of freeboard. Provide peak inflow, peak outflow, and the maximum water surface elevation at the pond. Provide the stage/storage/discharge relationships for the outlet structure(s) of the pond. Include all data to support the development of these rating curves/equations. For ponds that are to remain dry during non storm events, the pond must completely drain within a 24 to 72-hour time period. Provide a horseshoe shaped rip rap filter berm around the outlet structure. Include a detail of the rip rap berm and structure with maintenance notes. Provide a construction detail of the cross-section of the dam and outlet structure and include this in the plans. The data in the detail must be consistent with the data used in the calculations. A minimum of 2 anti-seep collars must be used along barrel pipe.
	Complete <input type="checkbox"/>		3. Show that the existing and proposed channels are stable for the proposed conditions. If temporary or permanent liners are needed, they should be designated on the plan sheets and on the cross-section details for the channel.

DESIGN STANDARDS (CONTINUED)	Check	Reference	Plan Requirements
<p>(Minimum Requirements - When Applicable)</p>	<p>Complete</p> <input type="checkbox"/>		<p>4. When velocities at outfalls are greater than the pre-development velocities, energy dissipators calculations must be provided. Energy dissipators include velocity breakers, plunge pools, rip rap aprons, etc. Provide appropriate details, dimensions, and indicate required stone size when appropriate.</p>
<p>All design standards must, at a minimum, meet the requirements stated in State Regulation R.61-9.</p>	<p>Complete</p> <input type="checkbox"/>		<p>5. When 5 or more acres are disturbed, the sediment trapping efficiency must be greater than 80%. When 10 or more disturbed acres drain to a single outlet, a sediment basin is required. Computer programs such as SEDCAD or SEDIMONT may be used to calculate the trapping efficiency. Sediment traps should be sized appropriately to handle the amount of land disturbance and drainage going to the trap. Rock Check Dam weir overflows should be designed to handle the 10-year storm. Sediment trap calculations relating to less than 5 acres may be required if the adjoining area is sensitive to sediment deposition (i.e., wetland, lake )SEDIMOT, IDEAL, SEDICAD</p>

## APPENDIX D: DETAILED PERMITTING AND NOTICE OF TERMINATION (NOT) PROCESSES

### Detailed Permitting and Construction Plan Submittal Process



1. For construction sites disturbing over 1 acre, the Developer / Engineer files Notice of Intent (NOI) for Stormwater Discharges from Large and Small Construction Activities (NPDES General Permit SCR 100000), NPDES CGP Fee, site construction plans, and supporting storm water management calculation package to SCDHEC.

Also, the Developer / Engineer must submit a copy of the NOI form, 6 sets of site construction plans, and the supporting storm water management calculation package to the City of Anderson Building Department.

2. SCDHEC conducts a review of the plans and supporting calculation package. It is the Developer / Engineer's responsibility to obtain the approval of SCDHEC.

The City conducts a review of the plans and supporting calculation package concurrently with SCDHEC's review. The City's Site Development Plan Checklist can be downloaded from the City's website.

Plan submittal packages that are not complete will be sent back to the Developer / Engineer. The City's review will begin once a complete plan submittal package has been received.

If plans meet all City requirements then a "Conditional Letter of Approval" is issued to the Developer / Engineer. The City's final approval and issuance of a land disturbance permit will be issued after the Developer / Engineer presents SCDHEC's approval letter to City's the Engineering Department.

---

### **Detailed Notice of Termination (NOT) Process**

The permittee shall notify the City of Anderson that the site, or portion of the site, is sufficiently stabilized to begin the NOT process. If portions of the site are to be completed prior to others (e.g. phased construction), a proposed schedule shall be included in the approved Land Disturbance Submittal Package. The NOT process shall at a minimum require:

1. A final plat showing the location of all stormwater easements and responsible party for the maintenance of the system. References shall be made to any and all ownership and lessee Covenants established for ensuring the maintenance and long term functioning of the stormwater system. The plats shall also show conflicts with other new or existing easements. If a permanent maintenance plan was required to be filed with the Anderson County Register of Deeds then a copy of the record shall be submitted along with the final plat.
2. Documentation from the owner of the approved Land Disturbance Submittal Package, which includes any revisions and as-built construction drawings, inspection reports, and stormwater system ownership transfers;
3. Certification and verification by a professional engineer that all components of the stormwater management system meet the approved Land Disturbance Submittal Package and specifications achieve the function for which they were designed. In addition, the site shall be cleared of all construction trash and debris from the stormwater system and the site as a whole;
4. A final inspection conducted by the City of Anderson through the City Manager or his duly appointed designee.

The NOT process must be completed by the City Manager or his designee prior to:

1. The use or occupancy of any newly constructed components of the site.
2. Final acceptance of any road into the Official Road Inventory Database or designated of road owner and associated stormwater management system.
3. Release of any bond held by the City of Anderson.
4. Approval and/or acceptance for recording of map, plat, or drawing, the intent of which is to cause a division of a single parcel of land into two or more parcels.

## APPENDIX E: PERMITTING STEPS SUMMARY TABLE

Steps for obtaining Land Disturbance Submittal Package approval from the City of Anderson:

<b>SITES DISTURBING ONE (1) ACRE OR MORE:</b>		
<b>Step 1:</b>	Submit required documentation to SCDHEC for review.	See the Notice of Intent (NOI) for Stormwater Discharges from Large and Small Construction Activities (NPDES General Permit SCR 100000) form for more information on submittal requirements to SCDHEC.
	Submit to the City of Anderson:	
	<ul style="list-style-type: none"> <li>Six (6) complete sets of plans and one (1) digital set of plans</li> </ul>	Use the <b>SITE DEVELOPMENT PLAN CHECKLIST</b> in Appendix A.
	<ul style="list-style-type: none"> <li>Stormwater Management Calculations Package</li> </ul>	Using the <b>STORMWATER MANAGEMENT DESIGN STANDARDS</b> outlined in Appendix C, and the <b>STORM WATER MANAGEMENT CALCULATION PACKAGE CHECKLIST</b> in Appendix B.
	<ul style="list-style-type: none"> <li>A copy of the completed Notice of Intent (NOI) for Stormwater Discharges from Large and Small Construction Activities (NPDES General Permit SCR 100000) form</li> </ul>	This form can be found on SCDHEC's website at <a href="http://www.scdhec.gov/environment/water/swerfmain.htm">http://www.scdhec.gov/environment/water/swerfmain.htm</a>
<b>Step 2:</b>	The City conducts a review of the submitted Land Disturbance Submittal Package concurrently with SCDHEC's review. If plans meet all City requirements then a "Conditional Letter of Approval" is issued to the Developer / Engineer.	Plan submittal packages that are not complete will be sent back to the Developer / Engineer. The City's review will begin once a complete Land Disturbance Submittal Package has been received.
<b>Step 3:</b>	The City's final approval and issuance of approved Land Disturbance Submittal Package after the Developer / Engineer presents SCDHEC Approval Letter to the City's Engineering Department.	Land disturbance activities can begin.
<b>Step 4:</b>	The permittee notifies the City of Anderson that the site, or portion of the site, is sufficiently stabilized to begin the NOT process.	See the detailed Notice of Termination (NOT) Process in Appendix D.

### **SITES DISTURBING LESS THAN ONE (1) ACRE:**

For development of a site disturbing less than 1 acre the City may conduct a simplified review and issue a land disturbance permit. Unless otherwise requested by the City of Anderson applicants shall submit to the City:

- Six (6) complete sets of plans and one (1) digital set of plans

Contact the City of Anderson Engineering Department for more information on submittal requirements for sites disturbing less than one (1) acre.